USER'S MANUAL

Of

Intel H61 Express Chipset

Based

M/B for Intel Core Processor Family

No. G03-NMF92-F

Rev: 1.0

Release date: February 6, 2012

Trademark:

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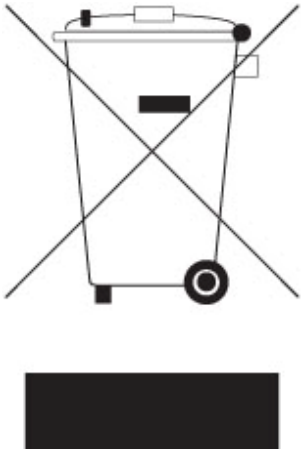
CAUTION Environmental Safety Instruction

- Avoid the dusty, humidity and temperature extremes. Do not place the product in any area where it may become wet.
- 0 to 40 centigrade is the suitable temperature. (The figure comes from the request of the main chipset)
- Generally speaking, dramatic changes in temperature may lead to contact malfunction and crackles due to constant thermal expansion and contraction from the welding spots' that connect components and PCB. Computer should go through an adaptive phase before it boots when it is moved from a cold environment to a warmer one to avoid condensation phenomenon. These water drops attached on PCB or the surface of the components can bring about phenomena as minor as computer instability resulted from corrosion and oxidation from components and PCB or as major as short circuit that can burn the components. Suggest starting the computer until the temperature goes up.
- The increasing temperature of the capacitor may decrease the life of computer. Using the close case may decrease the life of other device because the higher temperature in the inner of the case.
- Attention to the heat sink when you over-clocking. The higher temperature may decrease the life of the device and burned the capacitor.

Environmental Protection Announcement

Do not dispose this electronic device into the trash while discarding. To minimize pollution and ensure environment protection of mother earth, please recycle.



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Manual Revision Information

Reversion	Revision History	Date
1.0	First Edition	February 6, 2012

Item Checklist

- ☑ Motherboard
- ☑ User's Manual
- ☑ DVD for motherboard utilities
- ☑ Cable(s)
- ☑ I/O Back panel shield

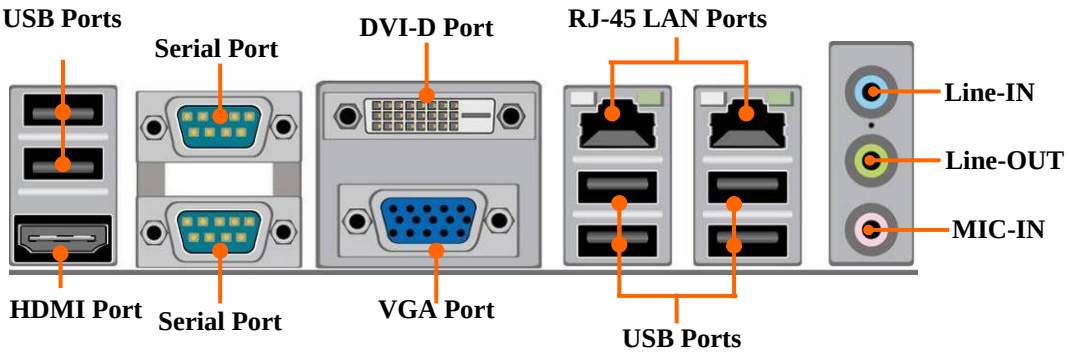
Chapter 1
Introduction of the Motherboard

1-1 Specification

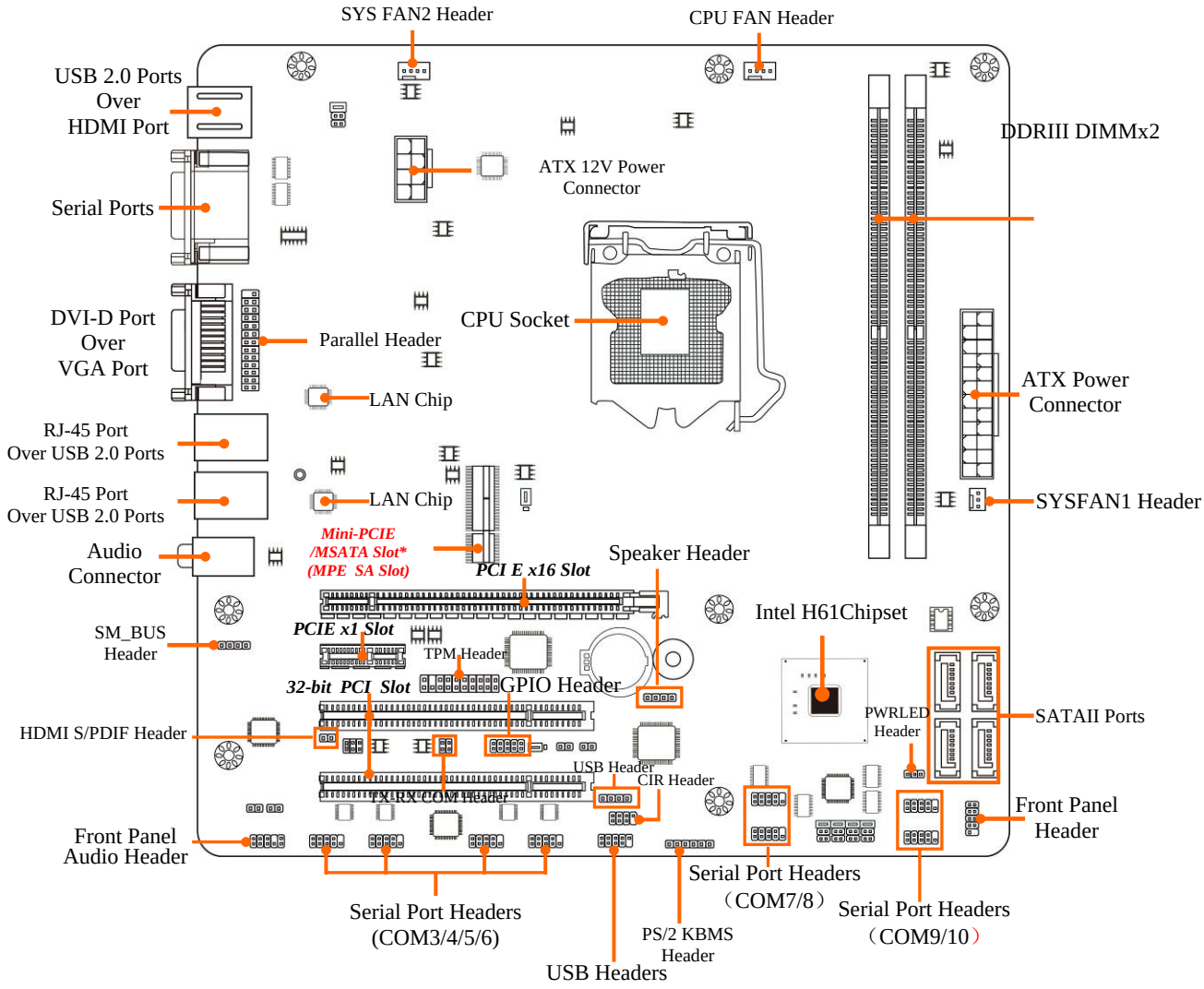
Spec	Description
Design	● Micro-ATX form factor, PCB Size: 24.5 x 24.5 cm
Chipset	● Intel H61 Express Chipset
CPU Socket (LGA1155)	● Support Intel® Core™ i7 Processor, Intel® Core™ i5 Processor, Intel® Core™ i3 Processor in the LGA 1155 Socket * *for detailed CPU support information please visit our website*
Memory Slot	● 240-pin DDRIII RAM module slot x 2 supporting two DDRIII 1066-1333MHz RAM Module expandable to 16GB ● Support dual-channel function
Expansion Slot	● 1 pcs* PCI-Express 2.0 x16 slot by 16 lane ● 1 pcs PCI-Express 2.0 x1 slot by 1 lane ● 2 pcs *32-bit PCI slot ● 1 pcs* Mini-PCIE/MSATA slot *(When this slot works as MSATA slot by connecting compatible MSATA hard disk, SATA4 port will be disabled)*
SATA2	● Support four serial ATA2 ports
Dual LAN Chip	● Integrated dual RTL8111E PCI-E Gigabit LAN chip ● Supports Fast Ethernet LAN function provide10/100/ 1000Mbps data transfer rate
Audio Chip	● Realtek ALC662 6-channel Audio Codec integrated ● Audio driver and utility included
BIOS	● 32M DIP Flash ROM
Multi I/O	● HDMI port connector x1 ● Serial port connector x2 ● VGA port connector x1 ● DVI-D port connector x1 ● USB 2.0 port connector x6 ● RJ-45 LAN connector x2 ● Audio connector x3 ● Front panel audio header x1 ● Serial port header x 8 ● RS422/RS485 header x1 ● Speaker header x1 ● PWRLED header x1 ● CIR header x1 ● 4-pin USB 2.0 header x1 ● 9-pin USB 2.0 header x2 ● PS/2 keyboard & mouse header x1 ● Front panel header x1 ● LANLED header x2 ● HDMI_SPDIF header x1 ● SM_BUS header x1 ● GPIO header x1 ● TPM 1.2 header x1 ● Parallel header x1

1-2 Layout Diagram

Rear IO Diagram

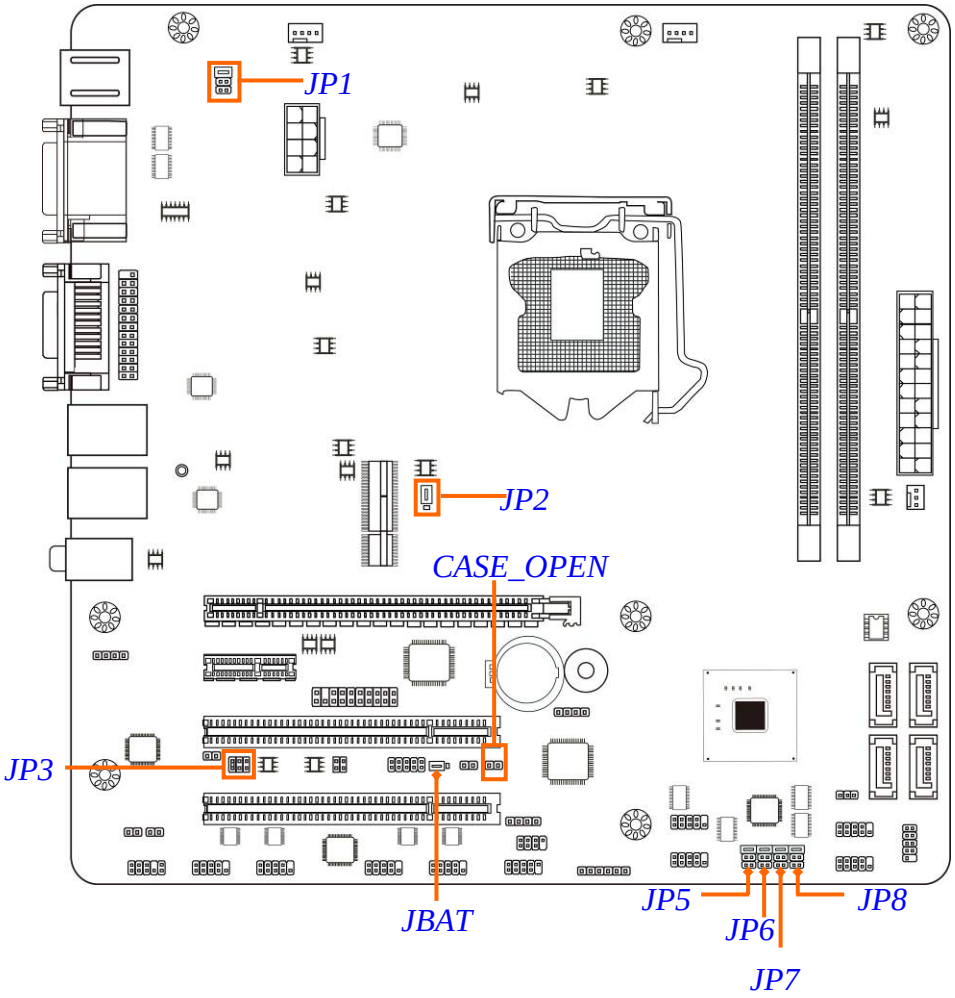


Motherboard Internal Diagram



***Note:** MPE_SA slot can work as Mini-PCIE slot or MSATA slot. In the case that user connects compatible MSATA hard disk to this slot, SATA4 port will be disabled.*

Motherboard Jumper Position



Jumper

Jumper	Name	Description
JBAT	CMOS RAM Clear Function Setting	3-pin Block
JP1	COM1 Pin9 Function Select	6-pin Block
JP2	Mini PCI-E Power VCC3.3V/3.3V SB	3-pin Block
JP3	COM3 RS232/485/422 Function Select	6-pin Block
JP5	COM7 Pin9 Function Select	6-pin Block
JP6	COM8 Pin9 Function Select	6-pin Block
JP7	COM9 Pin9 Function Select	6-pin Block
JP8	COM10 Pin9 Function Select	6-pin Block
CASE_OPEN	Case Open Message Display Function	2-pin Block

Connectors

Connector	Name	Description
ATXPWR	ATX Power Connector	24-pin Block
ATX12V	ATX 12V Power Connector	8-pin Block
SATA1/SATA2/ SATA3/SATA4	SATAII Connectors	7-pin Connector
HDMI	High-Definition Multimedia Interface	19-pin Connector
COM1	Serial Port COM Connector x 2	9-pin Connector
DVI	DVI-D Port Connector	24-pin Connector
VGA	Video Graphic Attach Connector	15-pin Female
USB from USB1/ UL1/UL2	USB Port Connector	4-pin Connector
LAN from UL1/UL2	RJ-45 LAN Connector	8-pin Connector
AUDIO1	Audio Connector	3-phone Jack

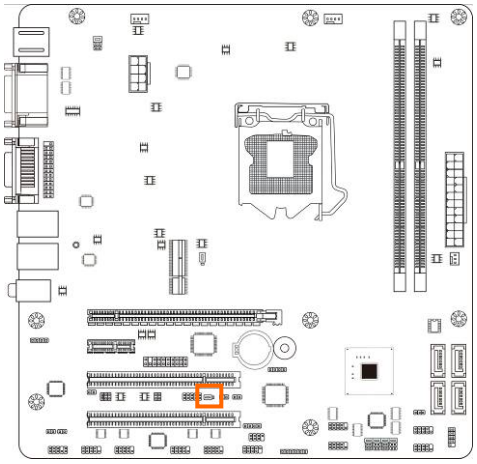
Headers

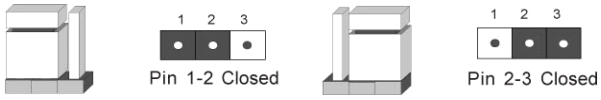
Header	Name	Description
FP_AUDIO	Front panel audio Header	9-pin block
COM3/4/5/6/7/8/9/10	Serial Port Header	9-pin Block
TX-RXCOM	RS 232/422/485 port headers	4-pin block
SPEAK	Speaker Header	4-pin Block
PWRLED	Power LED	3-pin Block
CIR	CIR module Header	7-pin Block
USB2	USB Header	4-pin Block
USB3	USB Header	9-pin Block
KBMS	PS2 Keyboard & Mouse Header	6-pin Block
JW_FP (Front Panel Header)	PWR LED/ HD LED/ /Power Button /Reset	9-pin Block
SYSFAN1	FAN Speed Header	3-pin Block
CPUFAN,SYSFAN2	FAN Speed Header	4-pin Block
LAN1LED/LAN2LED	LAN LED header	2-pin block
HDMI_SPDIF	SPDIF Out header	2-pin Block
SM_BUS	SMBUS header	4-pin Block
GPIO_CON	GPIO Header	10-pin Block
TPM	TPM Header	19-pin Block
PARALLEL	Parallel Header	25-pin Block

Chapter 2
Hardware Installation

2-1 Jumper Setting

(1) JBAT (3-pin): Clear CMOS



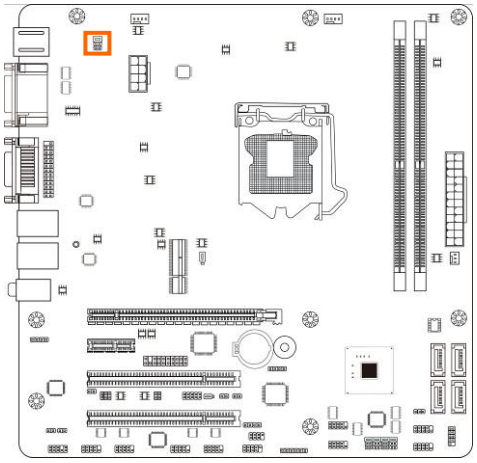


JBAT **JBAT**

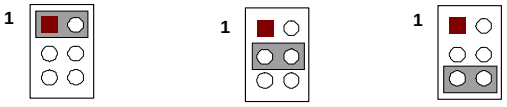
1-2 Closed: Normal; 2-3 Closed: Clear CMOS

CMOS RAM Clear Setting

(2)JP1 (6-pin): COM1 Pin9 function select

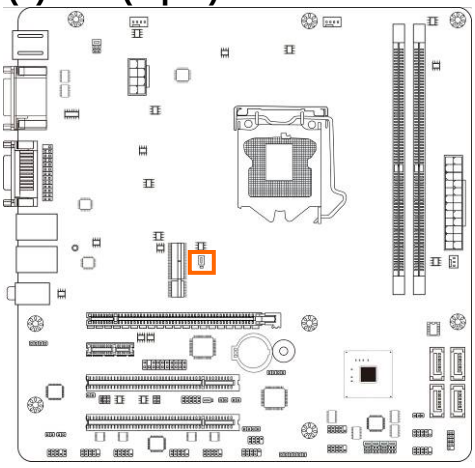


JP1



1-2 closed: RS232; 3-4 closed : +12V; 5-6 closed : +5V

(3) JP2 (3-pin): Mini PCI-E Power VCC 3V/ 3 VSB Function Select



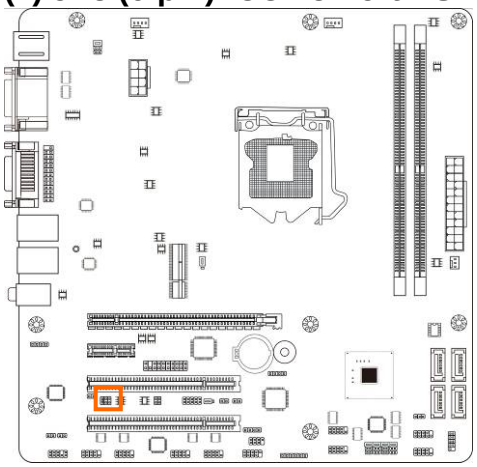
JP2

1-2 Closed: MINI PCI-E VCC= 3V Select;

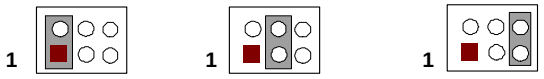
JP2

2-3 Closed: MINI PCI-E VCC= 3VSB Select

(4) JP3 (6-pin): COM3 Port RS232/485/422 Function Select

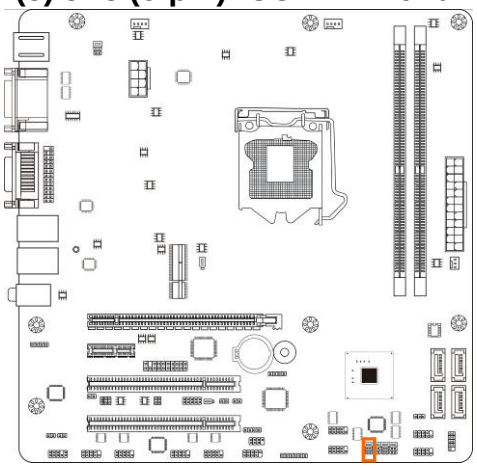


JP3

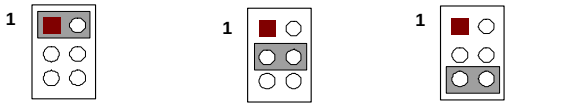


1-2 closed: RS232; 3-4 closed : RS485; 5-6 closed : RS422

(5) JP5 (6-pin): COM7 Pin9 function select

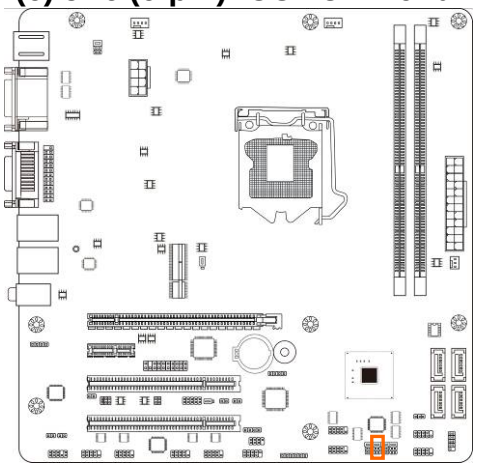


JP5

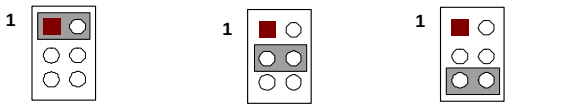


1-2 closed: RS232; 3-4 closed : +12V; 5-6 closed : +5V

(6) JP6 (6-pin): COM8 Pin9 function select

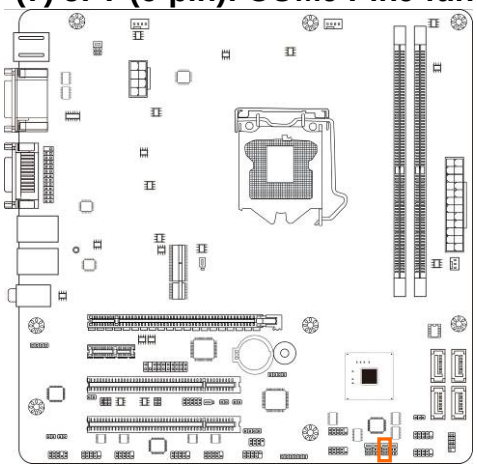


JP6

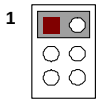


1-2 closed: RS232; 3-4 closed : +12V; 5-6 closed : +5V

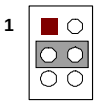
(7) JP7 (6-pin): COM9 Pin9 function select



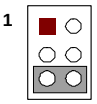
JP7



1-2 closed: RS232;

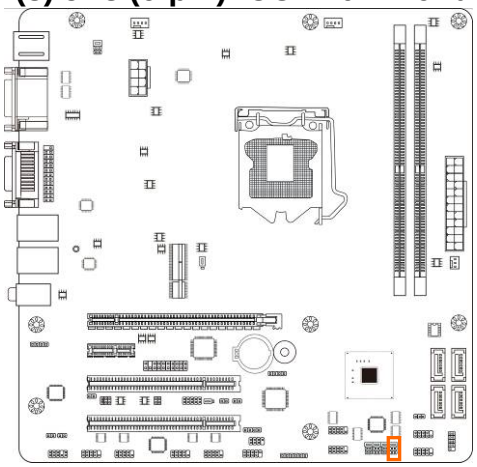


3-4 closed : +12V;

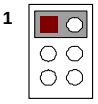


5-6 closed : +5V

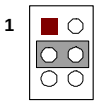
(8) JP8 (6-pin): COM10 Pin9 function select



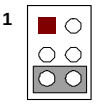
JP8



1-2 closed: RS232;

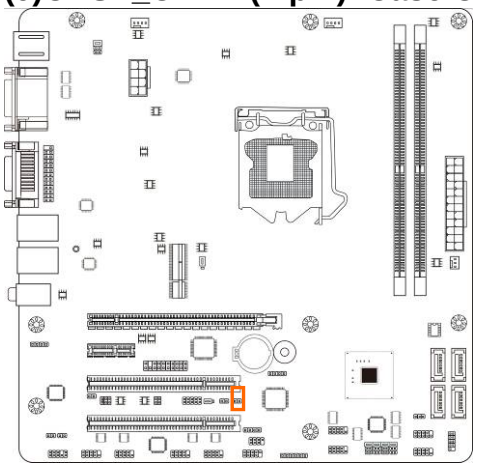


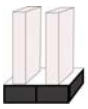
3-4 closed : +12V;

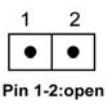


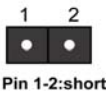
5-6 closed : +5V

(9)CASE_OPEN (2-pin): Case Open Message Display function select









COPEN

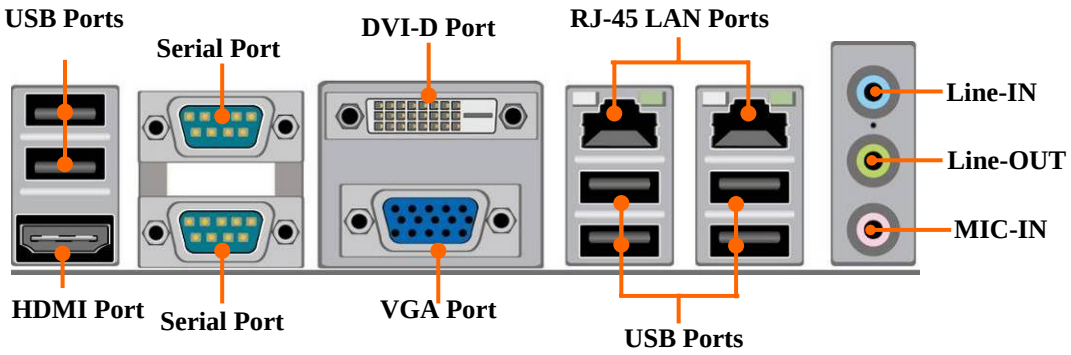
1-2 Open： Normal 1-2 Short： Case Open

Case Open Display Function

Pin 1-2 shorted: Case open display function enabled. In this case if you case is removed, next time when you restart your computer a message will be displayed onscreen to inform you of this.

2-2 Connectors and Headers

2-2-1 Rear I/O Back Panel Connectors



(1) High-Definition Multimedia Interface: HDMI1

This point-to-point interface is for audio and video signals designed as a single-cable solution for home theater and consumer electronics equipment.

(2) Serial port Connector: COM1

COM1 offers two 9-pin serial port connectors.

(3) Digital Visual Interface: DVI

This interface standard designed to maximize the visual quality of digital display devices such as flat panel LCD computer displays and digital projectors.

(4) D-Sub 15-pin Connector: VGA

VGA connector is the 15-pin D-subminiature female connector; it is for the display devices, such as the CRT monitor, LCD monitor and so on.

(5) USB Port Connectors: USB ports from USB1/UL1/ UL2

The connectors are 4-pin connector that connects USB devices to the system board.

(6) LAN Port connectors: RJ45 LAN ports from UL1/UL2

The connector is standard RJ45 connector for Network. It supports 10/100/1000Mbps data transfer rate.

(7) Audio Line-In, Lin-Out connector: AUDIO1

These Connectors are 3 Phone-Jack for LINE-OUT, LINE-IN, MIC audio connections.

Line-in: (BLUE)	Audio input to sound chip
Line-out: (GREEN)	Audio output to speaker
MIC: (PINK)	Microphone Connector

2-2-2 Motherboard Internal Connectors

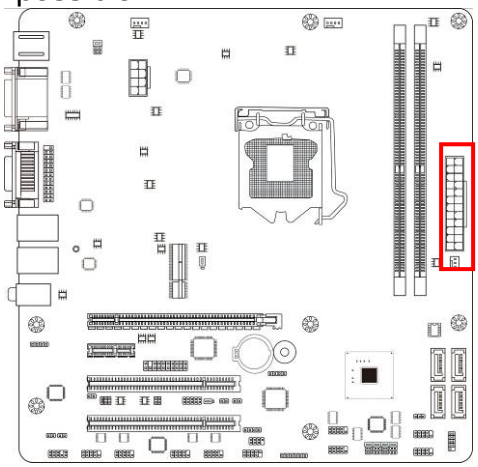
(1) Power Connector (24-pin block): ATXPWR

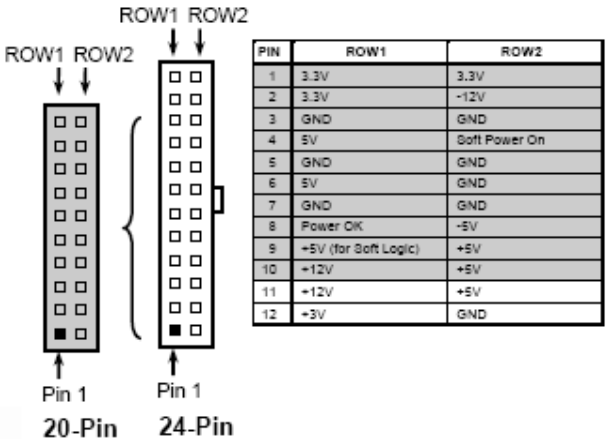
ATX Power Supply connector: This is a new defined 24-pins connector that usually comes with ATX case. The ATX Power Supply allows using soft power on momentary switch that connect from the front panel switch to 2-pins Power On jumper pole on the motherboard. When the power switch on the back of the ATX power supply turned on, the full power will not come into the system board until the front panel switch is momentarily pressed. Press this switch again will turn off the power to the system board.

** We recommend that you use an ATX 12V Specification 2.0-compliant power supply unit (PSU) with a minimum of 350W power rating. This type has 24-pin and 4-pin power plugs.

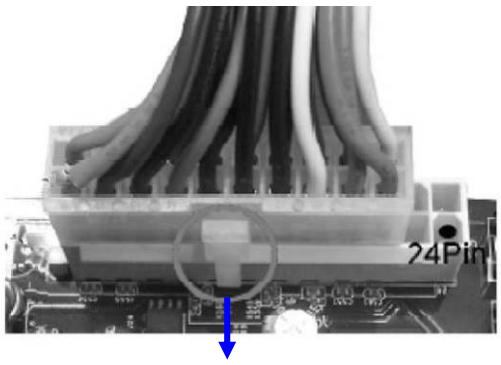
** If you intend to use a PSU with 20-pin and 4-pin power plugs, make sure that the 20-pin power plug can provide at least 15A on +12V and the power supply unit has a minimum power rating of 350W. The system may become unstable or may not boot up if the power is inadequate.

** If you are using a 20-pin power plug, please refer to Figure1 for power supply connection. Power plug form power supply and power connectors from motherboard both adopt key design to avoid mistake installation. You can insert the power plug into the connector with ease only in the right direction. If the direction is wrong it is hard to fit in and if you make the connection by force if is possible.





PIN	ROW1	ROW2
1	3.3V	3.3V
2	3.3V	-12V
3	GND	GND
4	5V	Soft Power On
5	GND	GND
6	5V	GND
7	GND	GND
8	Power OK	-5V
9	+5V (for Soft Logic)	+5V
10	+12V	+5V
11	+12V	+5V
12	+3V	GND



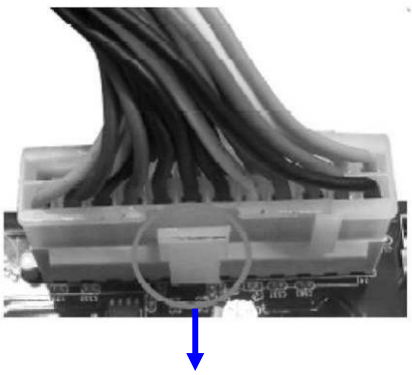
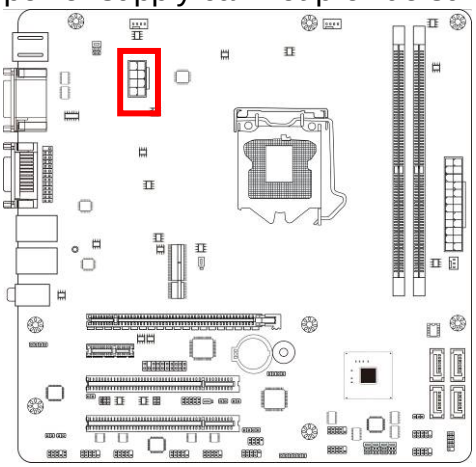


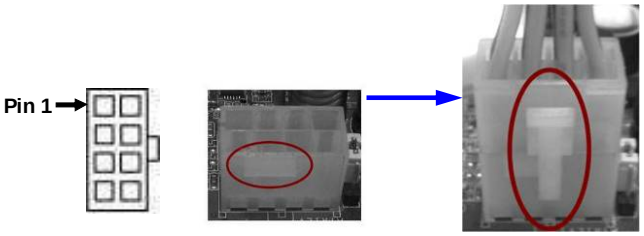
Figure1：20-pin power plug

Figure 2：24-pin power plug

(2) ATX 12V Power Connector (8-pin block) : ATX12V

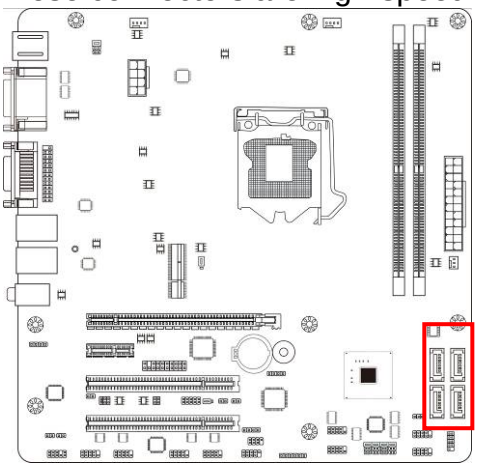
This is a new defined 8-pin connector that usually comes with ATX Power Supply. The ATX Power Supply which fully supports AMD AM3 processor must including this connector for support extra 12V voltage to maintain system power consumption. Without this connector might cause system unstable because the power supply can not provide sufficient current for system.



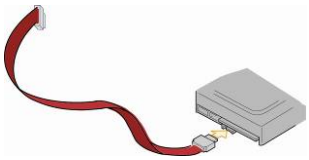


(3) SATAII Port connector: SATA1/SATA2/SATA3/SATA4

These connectors are high-speed SATAII ports that support 3 Gbps transfer rate.



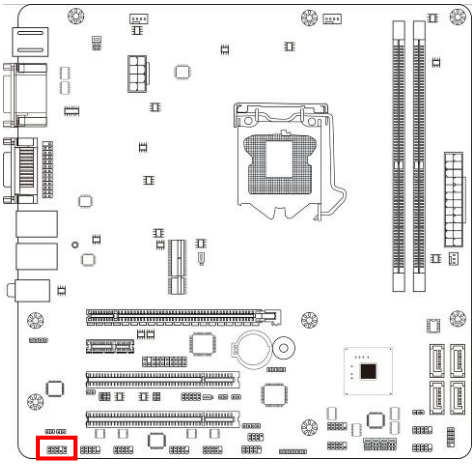
Pin No.	Definition
1	GND
2	TXP
3	TXN
4	GND
5	RXN
6	RXP
7	GND

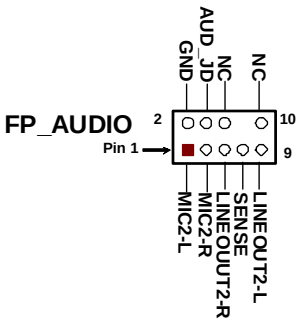


2-2-3 Header Pin Definition

(1) FP_AUDIO (9-pin): Line-Out/MIC Header for Front Panel

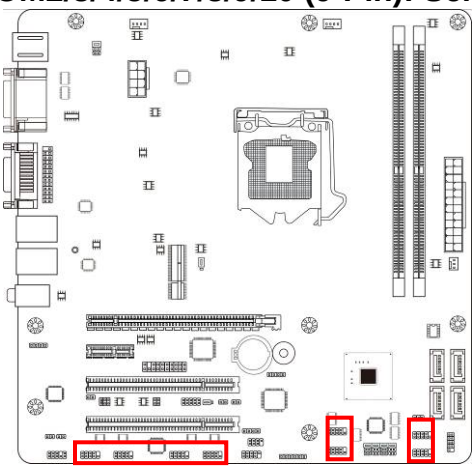
This header is connected to Front Panel Line-out, MIC connector with cable.

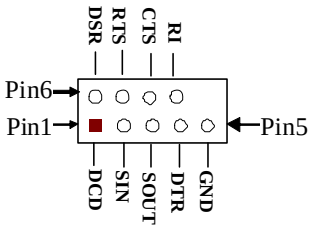




Line-Out, MIC Headers

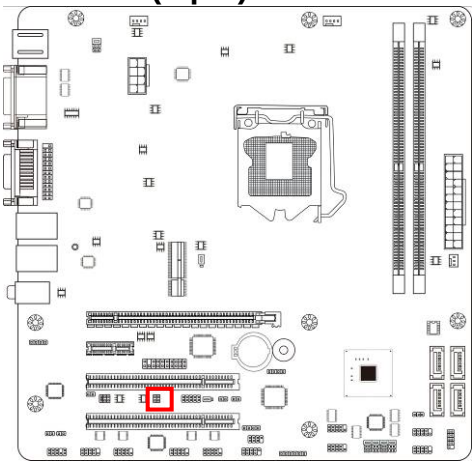
(2) COM2/3/4/5/6/7/8/9/10 (9-Pin): Serial Port Headers

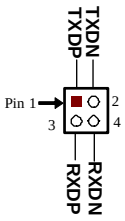




COM Port 9-pin Block

(3) TX-RXCOM (4-pin): RS232/422/485 Header





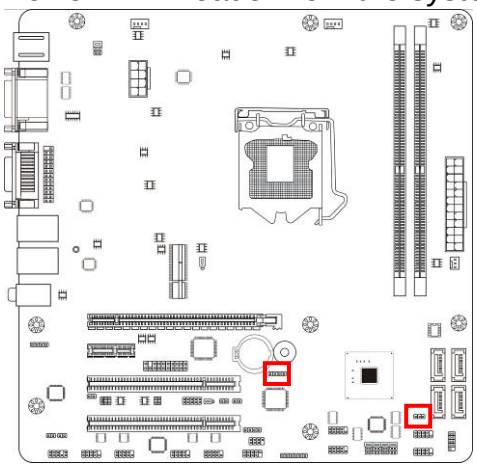
TX-RXCOM Header

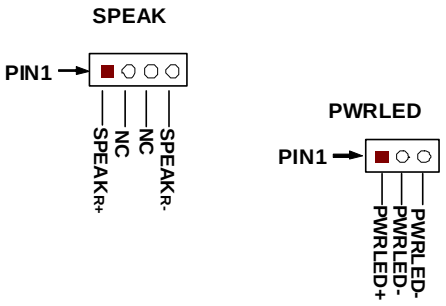
(4) SPEAK (4-pin): Speaker Header

This 4-pin header connects to the case-mounted speaker. See the figure below.

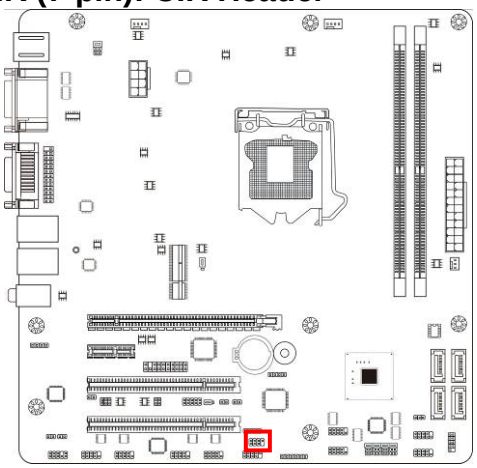
(5) PWR LED (3-pin): Power LED Header

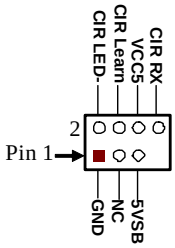
The Power LED header is light on while the system power is on. Connect the Power LED header from the system case to this pin.





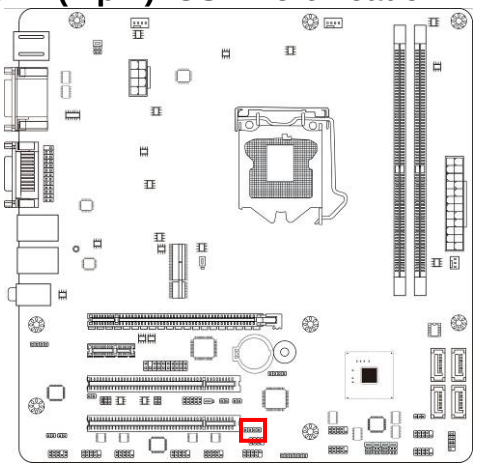
(6) CIR (7-pin): CIR Header

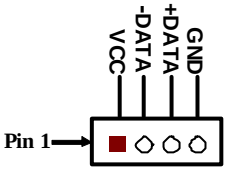




CIR Header

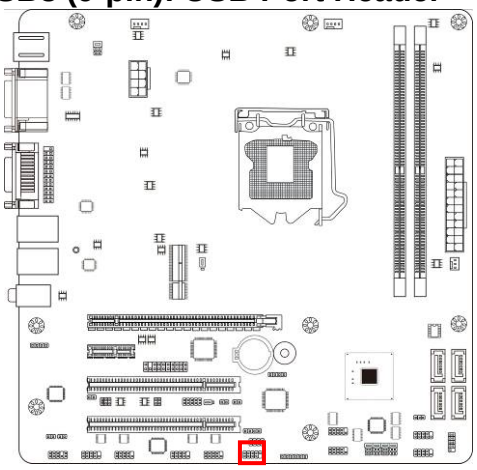
(7)USB2 (4-pin): USB Port Header

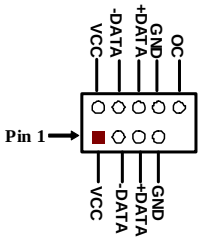




USB2 Header

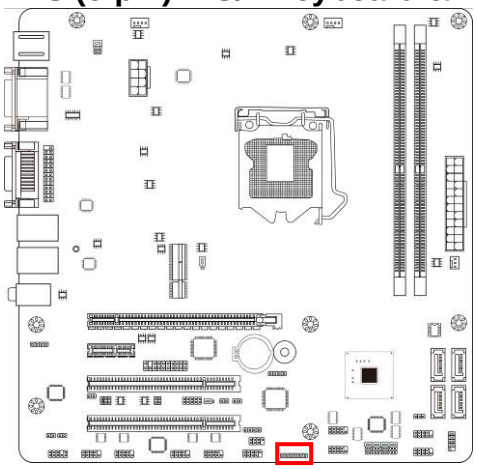
(8) USB3 (9-pin): USB Port Header

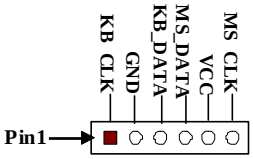




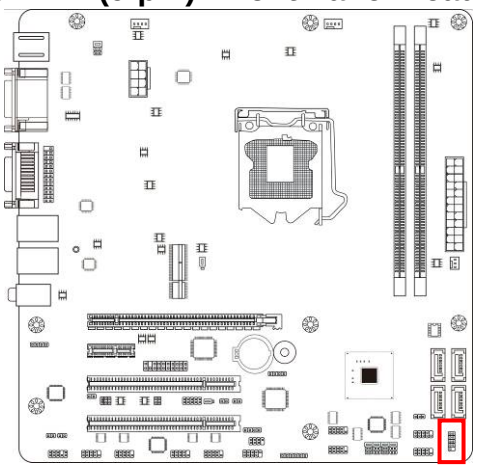
USB3 Header

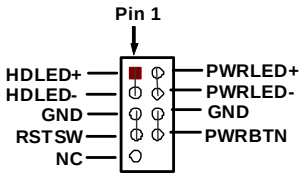
(9) KBMS (6-pin): PS/2 Keyboard & Mouse Header



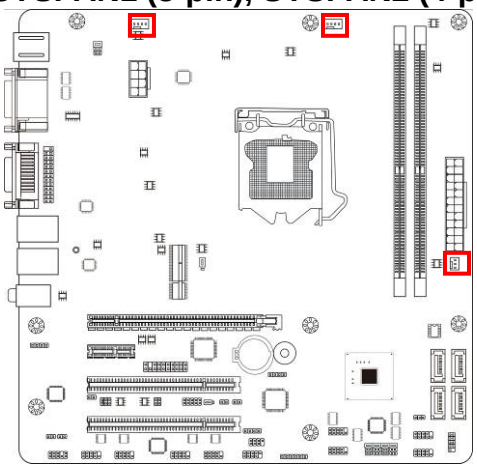


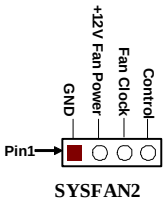
(10) JW-FP (9-pin): Front Panel Header



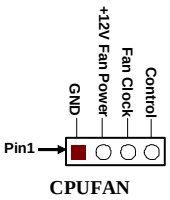


(11) SYSFAN1 (3-pin), SYSFAN2 (4-pin), CPUFAN1 (4-pin): FAN Headers

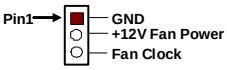




SYSFAN2

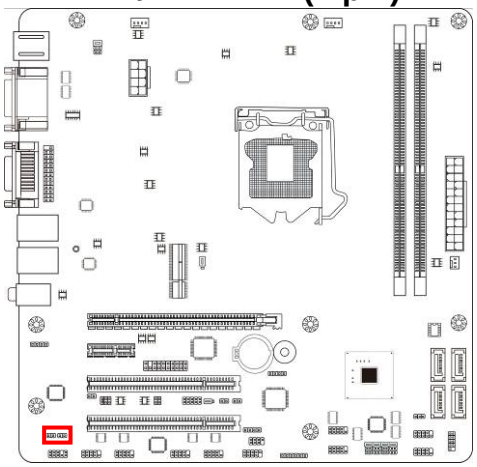


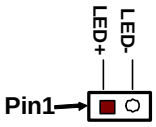
CPUFAN



FAN Headers

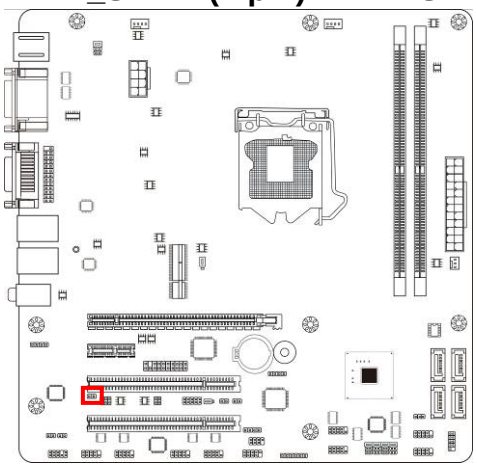
(12) LAN1LED/LAN2LED (2-pin): LANLED

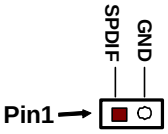




LANLED Header

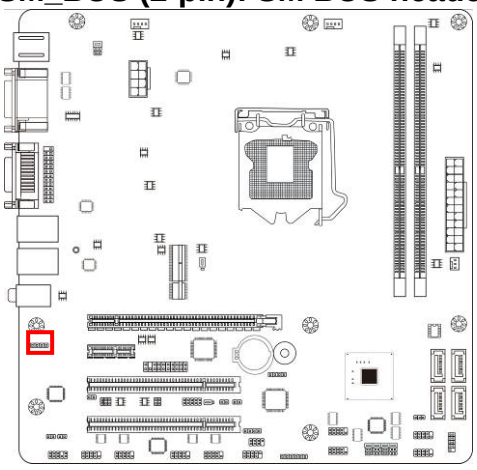
(13) HDMI_SPDIF (2-pin): HDMI-SPDIF Out header

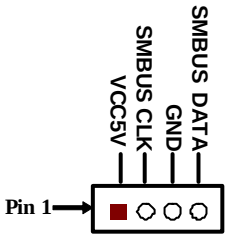




HDMI_SPDIF Header

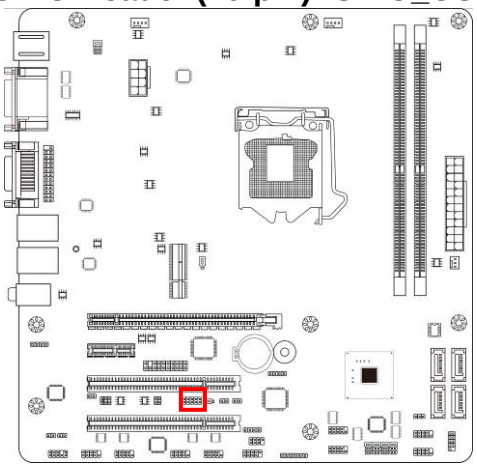
(14)SM_BUS (2-pin): SM BUS header

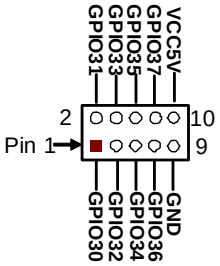




SM_BUS Header

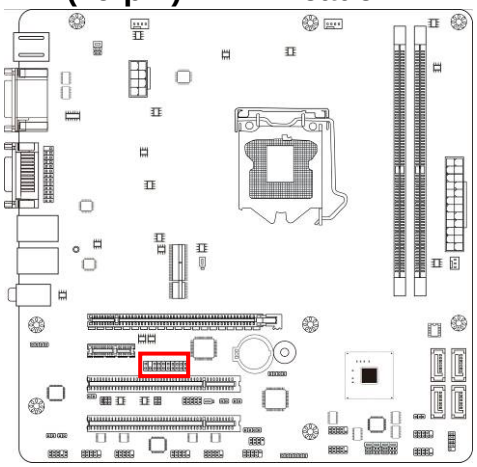
(15) GPIO Header (10-pin): GPIO_CON

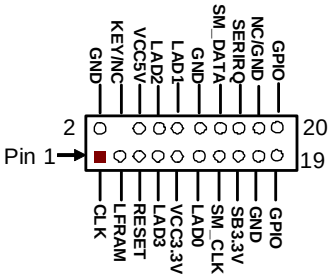




GPIO_CON Header

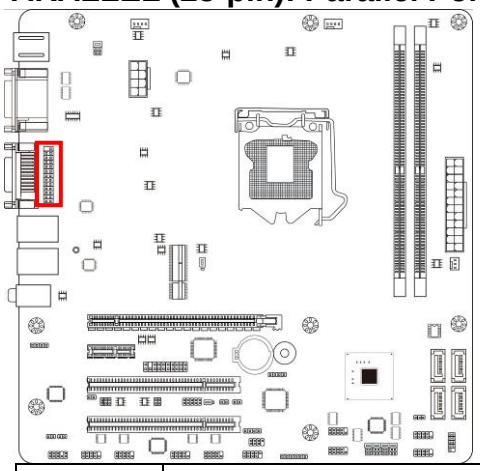
(16) TPM (19-pin): TPM Header

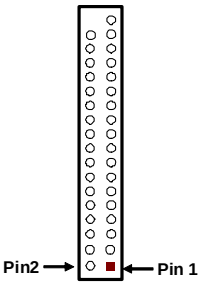




TPM Header

(17) PARALLEL (25-pin): Parallel Port Header





Parallel Port Header

Pin NO.	Pin Definition	Pin NO.	Pin Definition
Pin 1	STB-	Pin 2	AFD-
Pin 3	PD0	Pin 4	ERR-
Pin 5	PD1	Pin 6	INIT-
Pin 7	PD2	Pin 8	SLIN-
Pin 9	PD3	Pin 10	GND
Pin 11	PD4	Pin 12	GND
Pin 13	PD5	Pin 14	GND
Pin 15	PD6	Pin 16	GND
Pin 17	PD7	Pin 18	GND
Pin 19	ACK-	Pin 20	GND
Pin 21	BUSY	Pin 22	GND
Pin 23	PE	Pin 24	GND
Pin 25	SLCT		

Chapter 3
Introducing BIOS

Notice!	The BIOS options in this manual are for reference only. Different configurations may lead to difference in BIOS screen and BIOS screens in manuals are usually the first BIOS version when the board is released and may be different from your purchased motherboard. Users are welcome to download the latest BIOS version form our official website.

The BIOS is a program located on a Flash Memory on the motherboard. This program is a bridge between motherboard and operating system. When you start the computer, the BIOS program will gain control. The BIOS first operates an auto-diagnostic test called POST (power on self test) for all the necessary hardware, it detects the entire hardware device and configures the parameters of the hardware synchronization. Only when these tasks are completed done it gives up control of the computer to operating system (OS). Since the BIOS is the only channel for hardware and software to communicate, it is the key factor for system stability, and in ensuring that your system performance as its best.

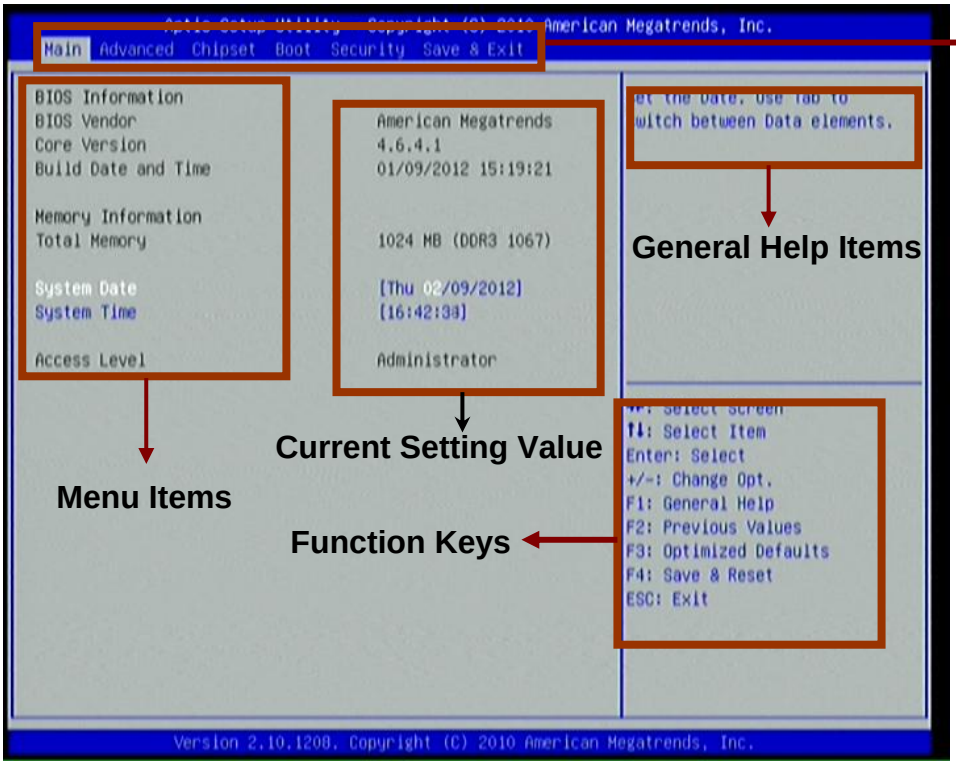
3-1 Entering Setup

Power on the computer and by pressing <Del> immediately allows you to enter Setup. If the message disappears before your respond and you still wish to enter Setup, restart the system to try again by turning it OFF then ON or pressing the “RESET” button on the system case. You may also restart by simultaneously pressing <Ctrl>, <Alt> and <Delete> keys. If you do not press the keys at the correct time and the system does not boot, an error message will be displayed and you will again be asked to

Press **<Del>** to enter Setup

3-2 BIOS Menu Screen

The following diagram show a general BIOS menu screen:



BIOS Menu Screen

3-3 Function Key

In the above BIOS Setup main menu of, you can see several options. We will explain these options step by step in the following pages of this chapter, but let us first see a short description of the function keys you may use here:

- Press←→ (left, right) to select screen;
- Press ↑↓ (up, down) to choose, in the main menu, the option you want to confirm or to modify.
- Press <Enter> to select.
- Press <+>/<–> keys when you want to modify the BIOS parameters for the active option.
- [F1]: General help.
- [F2]: Previous value.
- [F3]: Optimized defaults.
- [F4]: Save & Reset.
- Press <Esc> to quit the BIOS Setup.

3-4 Getting Help

Main Menu

The on-line description of the highlighted setup function is displayed at the top right corner the screen.

Status Page Setup Menu/Option Page Setup Menu

Press F1 to pop up a small help window that describes the appropriate keys to use and the possible selections for the highlighted item. To exit the Help Window, press <**Esc**>.

3-5 Menu Bar

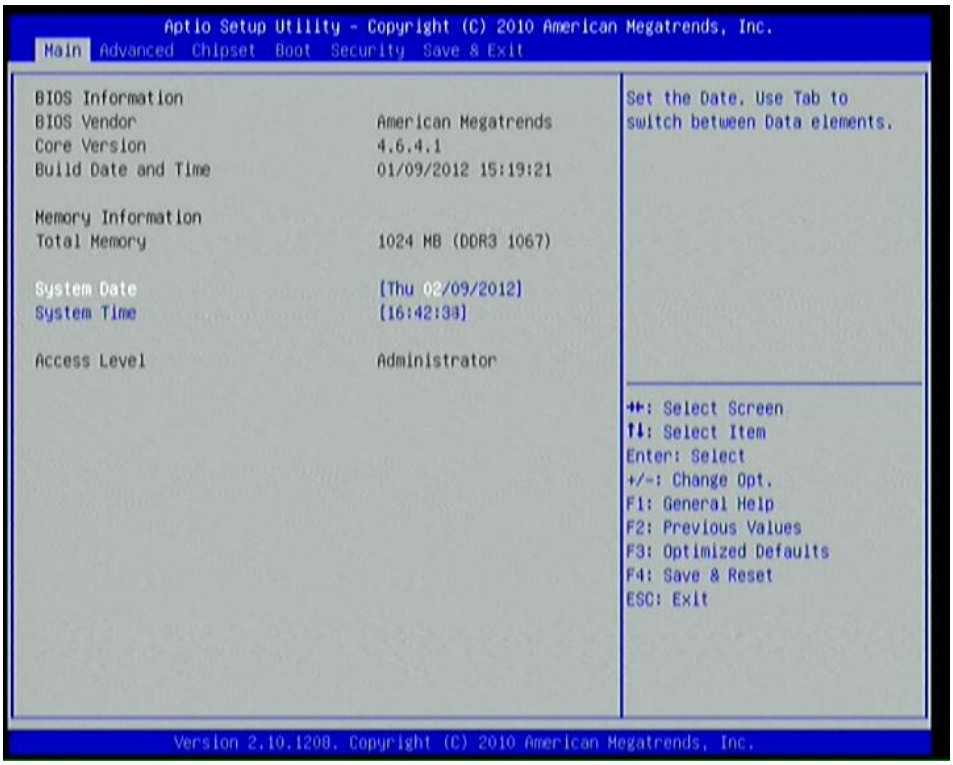
There are six menu bars on top of BIOS screen:

Main	To change system basic configuration
Advanced	To change system advanced configuration
Chipset	To change chipset configuration
Boot	To change boot settings
Security	Password settings
Save & Exit	Save setting, loading and exit options.

User can press the right or left arrow key on the keyboard to switch from menu bar. The selected one is highlighted.

3-6 Main Menu

Main menu screen includes some basic system information. Highlight the item and then use the <+> or <-> and numerical keyboard keys to select the value you want in each item.


Aptio Setup Utility – Copyright (C) 2010 American Megatrends, Inc.
Main Advanced Chipset Boot Security Save & Exit
BIOS Information
BIOS Vendor American Megatrends
Core Version 4.6.4.1
Build Date and Time 01/09/2012 15:19:21
Memory Information
Total Memory 1024 MB (DDR3 1067)
System Date [Thu 02/09/2012]
System Time [16:42:33]
Access Level Administrator
Set the Date. Use Tab to switch between Data elements.
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Reset
ESC: Exit
Version 2.10.1208. Copyright (C) 2010 American Megatrends, Inc.

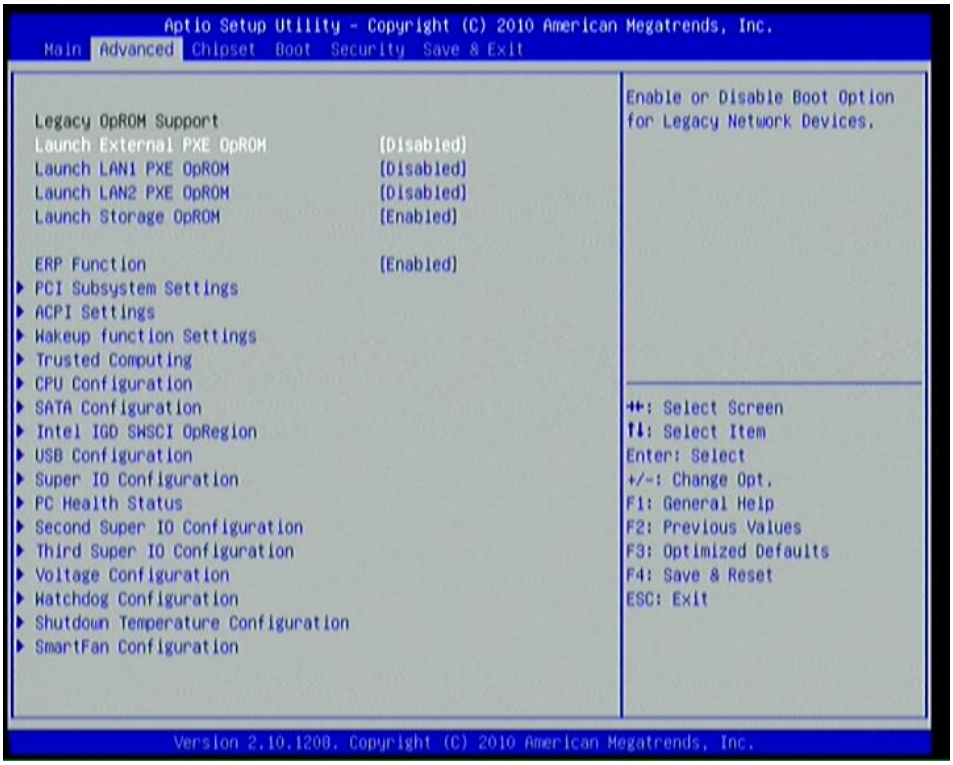
System Date

Set the date. Please use **[Tab]** key to switch between data elements.

System Time

Set the time. Please use **[Tab]** key to switch between time elements.

3-7 Advanced Menu



Launch OpROM Support:

Launch External PXE OpROM/Launch LAN1 PXE OpROM

/Launch LAN2 PXE OpROM

Use this item to enable or disable boot option for legacy network devices.

Launch Storage OpROM

Use this item to enable or disable boot option for legacy mass storage devices with option ROM.

ERP Function

Use this item to enable or disable ERP function for this board. This item should be set as [Disabled] if you wish to have Active All Wakeup Function.

PCI Subsystem Settings

Press [Enter] to enter and make settings for **PCI Express Settings** and **PCI Express GEN2 Settings.**

PCI Express Settings

Press [Enter] to make settings for the following PCI Express Device Register Settings:

PCI Express Device Register Settings:

Relaxed Ordering

Use this item to enable or disable PCI express device relaxed ordering.

Extended Tag

If set as [Enabled] it will allow device to use 8-bit tag field as a requester.

No Snoop

Use this item to enable or disable PCI Express device No Snoop option.

Maximum Payload

Use this item to set maximum payload of PCI Express device or allow system BIOS to select the value.

Maximum Read Request

Use this item to set maximum read request size of PCI Express device or allow system BIOS to select the value.

PCI Express Link Register Settings:

ASPM Support

The optional settings: [Disabled]; [Auto]; [Force L0].

Extended Synch

If set as [Enabled] it will allow generation of extended synchronization patterns.

Link Training Retry

Use this item to define number of retry attempts software will take to restrain the link if previous training attempt was unsuccessful.

Link Training Timeout(uS)

Use this item to define number of microseconds software will wait before polling 'Link Training' bit in link status register.

Unpopulated Links

The optional settings are: [Keep Link ON]; [Disable Link].

PCI Express GEN2 Settings

Press [Enter] to make settings for the following PCI Express GEN Devices Settings:

PCI Express GEN2 Device Register Settings:

Completion Timeout

The optional settings are: [Default]; [Shorter];[Longer]; [Disabled].

ARI Forwarding

The optional settings are: [Disabled]; [Enabled].

AtomicOp Register Enable

The optional settings are: [Disabled]; [Enabled].

AtomicOp Egress Blocking

The optional settings are: [Disabled]; [Enabled].

ID0 Request Enable

The optional settings are: [Disabled]; [Enabled].

ID0 Completion Enable

The optional settings are: [Disabled]; [Enabled].

LTR Mechanism Enable

The optional settings are: [Disabled]; [Enabled].

End-End TLP Prefix Blocking

The optional settings are: [Disabled]; [Enabled].

PCI Express GEN2 Link Register Settings

Target Link Speed

The optional settings are: [Auto]; [Force to 2.5GT/s].

Selectable De-emphasis

The optional settings are: [-3.5 dB]; [-6.0dB].

Clock Power Management

The optional settings are: [Disabled]; [Enabled].

Compliance SOS

The optional settings are: [Disabled]; [Enabled].

Hardware Autonomous Width

The optional settings are: [Disabled]; [Enabled].

Hardware Autonomous Speed

The optional settings are: [Disabled]; [Enabled].

ACPI Settings

ACPI Sleep State

Use this item to select the highest ACPI sleep state the system will enter when the suspend button is pressed.

The optional settings are: [S1(CPU Stop Clock)]; [S3(Suspend to RAM)].

Wakeup Function Settings

Wake System with Fixed Time

Use this item to enable or disable system wake on alarm event. When set as [Enabled], system will wake on the hour/min/sec specified.

CIR Wakeup

Use this item to enable or disable CIR wakeup.

PS2 KB/MS Wakeup

Use this item to enable or disable PS2 KB/MS wakeup function.

PCI PME Wakeup

Use this item to enable or disable S3/S4/S5 PCI PME wakeup function.

USB S3/S4 Wakeup

Use this item to enable or disable USB S3/S4 wakeup function.

Trusted Computing

Press [Enter] to set TPM Configuration

TPM Support

The optional settings are: [Disabled]; [Enabled].Use this item to enable or disable

TPM support. O.S will not show TPM. Reset of platform is required. When set as [Enabled], user can further enable or disable **TPM State.**

CPU Configuration

Socket 0 CPU Information

Press [Enter] to view detailed CPU information.

Active Processor Cores

Use this item to select number of cores to enable in each processor package.

Limit CPUID Maximum

This item should be set as [Disabled] for Windows XP.

Execute Disable Bit

The optional settings are: [Disabled]; [Enabled].

Hardware Prefetcher

Use this item to turn on/off the Mid Level Cache (L2) streamer prefetcher.

Adjacent Cache Line Prefetch

Use this item to turn on/off prefetching of adjacent cache lines.

Intel Virtualization Technology

The optional settings: [Enabled]; [Disabled].

When set as [Enabled], a VHM can utilize the additional hardware capabilities provided by Vanderpool Technology.

Power Technology

Use this item to enable power management features.

The optional settings are: [Disabled]; [Energy Efficient]; [Custom].

SATA Configuration

SATA Mode

The optional settings are: [Disabled]; [IDE Mode]; [AHCI Mode].

Serial-ATA Controller 0

The optional settings are: [Disabled]; [Enhanced]; [Compatible].

Serial-ATA Controller 1

The optional settings are: [Disabled]; [Enhanced].

Intel IGD SWSCI OpRegion

IGD-Boot Type

Use this item to select the video device which will be activated during POST. This has no effect if external graphics present.

The optional settings are: [VBIOS Default]; [CRT]; [HDMI].

USB Configuration

Legacy USB Support

The optional settings are: [Auto]; [Disabled]; [Enabled].

EHCI Hand-off

The optional settings are: [Disabled]; [Enabled].

USB Transfer time-out

Use this item to set the time-out value for control, bulk, and interrupt transfers.

Device reset time-out

Use this item to set USB mass storage device start unit command time-out.

Device power-up delay

Use this item to set maximum time the device will take before it properly reports itself to the host controller. 'Auto' uses default value: for a root port it is 100 ms, for a hub port the delay is taken from hub descriptor. The optional settings: [Auto]; [Manual].Select [Manual] you can set value for the following sub-item: **Device Power-up delay in seconds,** the delay range in from 1 to 40 seconds in one second increments.

Super IO Configuration

COM1 Port Configuration

Press [Enter] to make settings for the following items:

Serial Port

Use this item to enable or disable serial port.

Change Settings

Use this item to select an optimal setting for super IO device.

COM2 Port Configuration

Press [Enter] to make settings for the following items:

Serial Port

Use this item to enable or disable serial port.

Change Settings

Use this item to select an optimal setting for super IO device.

Parallel Port Configuration

Press [Enter] to make settings for the following items:

Parallel Port

Use this item to enable or disable parallel port(LPT/LPE).

Change Settings

Use this item to change the printer port mode.

Device Mode

Use this item to change the printer port mode.

CIR Controller

Use this item to enable or disable CIR controller.

Case Open Detect

Use this item to detect case has already open or not, show message in POST.

PC Health Status

Press [Enter] to view hardware health status.

Second Super I/O Configuration

COM3 Port Configuration

Press [Enter] to make settings for the following items:

Serial Port

Use this item to enable or disable serial port (COM).

Change Settings

Use this item to select an optimal setting for super IO device.

Serial Port Mode Select

The optional settings are: [RS232]; [RS422/RS485].

COM4 Port Configuration

Press [Enter] to make settings for the following items:

Serial Port

Use this item to enable or disable serial port (COM).

Change Settings

Use this item to select an optimal setting for super IO device.

COM5 Port Configuration

Press [Enter] to make settings for the following items:

Serial Port

Use this item to enable or disable serial port (COM).

Change Settings

Use this item to select an optimal setting for super IO device.

COM6 Port Configuration

Press [Enter] to make settings for the following items:

Serial Port

Use this item to enable or disable serial port (COM).

Change Settings

Use this item to select an optimal setting for super IO device.

Third Super I/O Configuration

COM7 Port Configuration

Press **[Enter]** to make settings for the following items:

Serial Port

Use this item to enable or disable serial port (COM).

Change Settings

Use this item to select an optimal setting for super IO device.

Serial Port Mode Select

The optional settings are: [RS232]; [RS422/RS485].

COM8 Port Configuration

Press [Enter] to make settings for the following items:

Serial Port

Use this item to enable or disable serial port (COM).

Change Settings

Use this item to select an optimal setting for super IO device.

COM9 Port Configuration

Press [Enter] to make settings for the following items:

Serial Port

Use this item to enable or disable serial port (COM).

Change Settings

Use this item to select an optimal setting for super IO device.

COM10 Port Configuration

Press [Enter] to make settings for the following items:

Serial Port

Use this item to enable or disable serial port (COM).

Change Settings

Use this item to select an optimal setting for super IO device.

Voltage Configuration

DIMM Voltage

The optional settings are: [1.50V]; [1.65V]; [1.80V]; [1.95V].

WatchDog Configuration

WatchDog Timer Control

Use this item to enable or disable WatchDog Timer Control. When set as Enabled, the following sub-items shall appear:

WatchDog Timer Value

User can set a value in the range of 4 to 255.

WatchDog Timer Unit

The optional settings are: [Second];[Minute].

Shutdown Temperature Configuration

Use this item to select system shutdown temperature.

SmartFan Configuration

SYSTEM FAN2 3/4 Pin Fan Select

The optional settings are: [3 Pin]; [4 Pin].

CPUFAN / SYSFAN1/SYSFAN2 SmartFan Mode

When set as [Enabled], the following sub-items shall appear:

CPUFAN / SYSFAN1/SYSFAN2 Full Speed Temp

Use this item to set a degree for CPU/System fan1/ System fan2 FAN will run at full speed when above the specific temperature set.

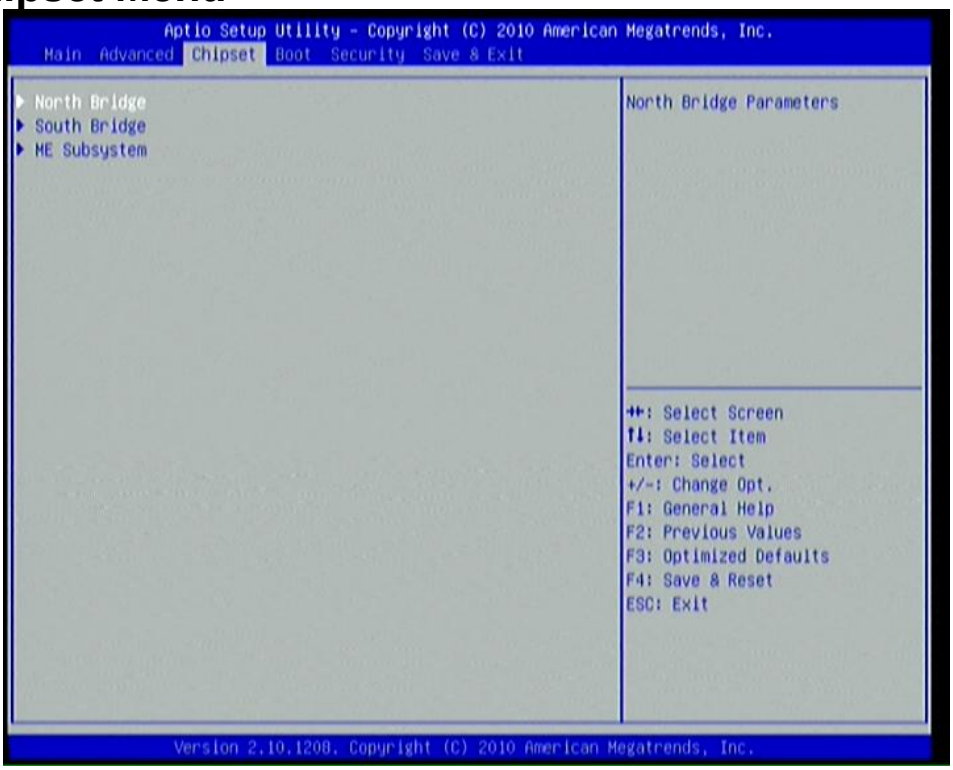
CPUFAN / SYSFAN1/SYSFAN2 Idle Temp

Use this item to set a degree for CPU/System fan1/ System fan2. FAN will idle speed when below this temperature.

CPUFAN / SYSFAN1/SYSFAN2 Stop Temp

Use this item to set a degree for CPU/System fan1/ System fan2. CPU FAN will stop when below this temperature.

3-8 Chipset Menu



North Bridge

LOW MMIO Align

The optional settings are: [64M]; [1024M].

VT-d

The optional settings are: [Enabled]; [Disabled].

Initiate Graphics Adapter

Select which graphics controller to use as the primary boot device. The optional settings are:[IGD]; [PCI/IGD]; [PCI/PEG]; [PEG/IGD]; [PEG/PCI].

IGD Memory

Use this item to set IGD share memory size.

IGD Multi-Monitor

Use this item to enable or disable IGD multi-monitor by internal graphics device.

PCI Express Port

The optional settings are: [Auto];[Enabled]; [Disabled].

PEG Force Gen1

Use this item to enable or disable PCI Express port Force Gen1.

Detect Mon-Compliance Device

Use this item to enable or disable Non-Compliance PCI Express device in PEG.

South Bridge

SB Chipset Configuration

Onboard Lan1 Device/ Onboard Lan2 Device

Use this item to enable or disable the PCI Express port in the chipset.

Restore AC Power Loss

Use this item to specify what state to go to when power is re-applied after a power failure (G3 State). The optional settings are: [Power Off]; [Power On]; [Last State].

SLP_S4 Assertion Stretch Enable

The optional settings are: [Enabled]; [Disabled].

Deep Sx

The optional settings are: [Disabled]; [Enabled in S5]; [Enabled in S4 and S5].

Audio Configuration

Azalia HD Audio

The optional settings are: [Enabled]; [Disabled].

Azalia Internal HDMI Codec

Use this item to enable or disable internal HDMI codec for Azalia.

High Precision Event Timer Configuration

High Precision Timer

The optional settings are: [Enabled]; [Disabled].

USB Configuration

Press [Enter] to further setting USB port configuration. User can enable or disable specific USB port selected, or choose to enable or disable all USB devices.

ME subsystem

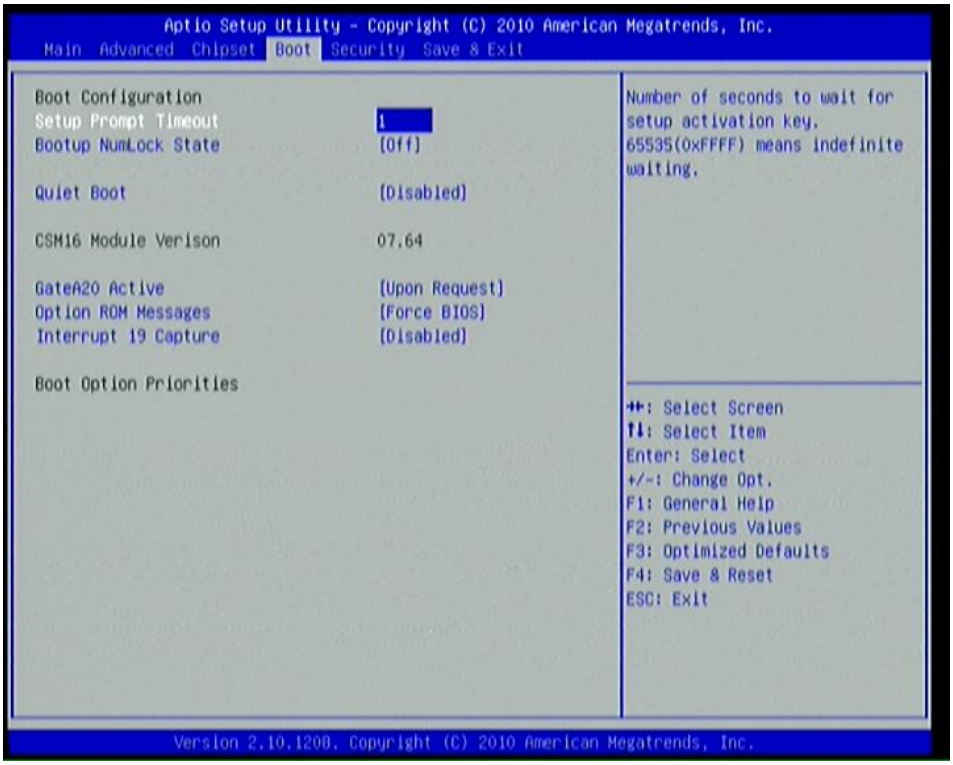
ME Subsystem

Use this item to enable or disable ME subsystem.

ME Temporary Disable

Use this item to enable or disable ME temporary disable help.

3-9 Boot Menu



Boot Configuration

Setup Prompt Timeout

Use this item to set number of seconds to wait for setup activation key.

Bootup Numlock State

Use this item to select keyboard numlock state. The optional settings are: [On]; [Off].

Quiet Boot

The optional settings are: [Enabled]; [Disabled].

Gate A20 Active

The optional settings are: [Upon Request]; [Always].

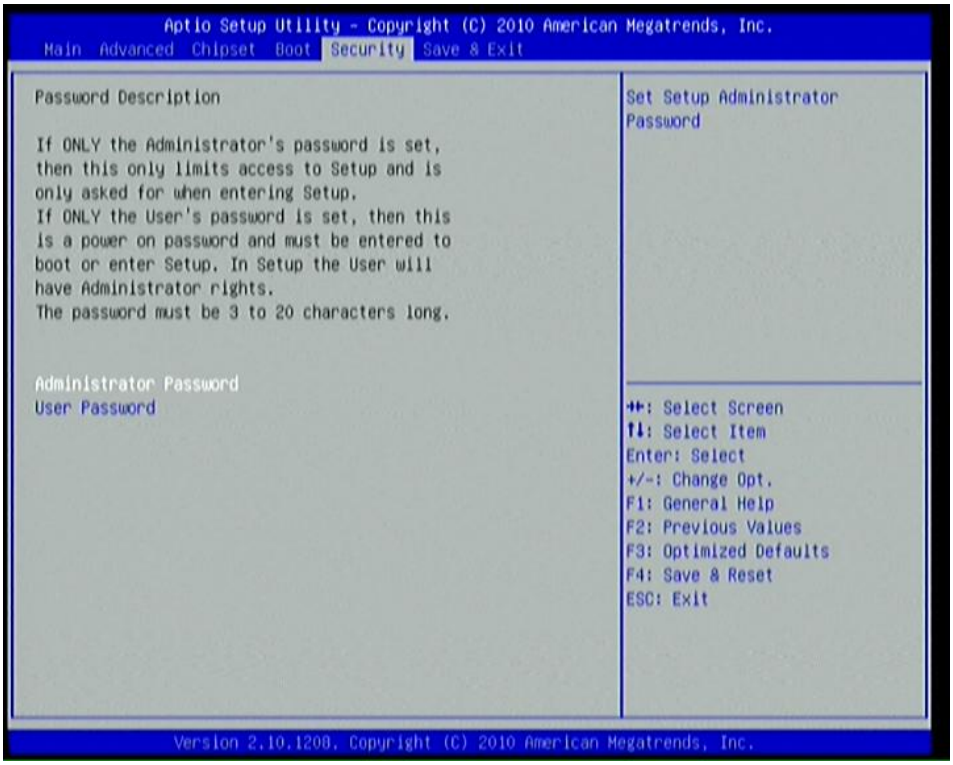
Option ROM Message

Use this item to set display mode for option ROM. The optional settings are: [Force BIOS]; [Keep Current].

Interrupt 19 Capture

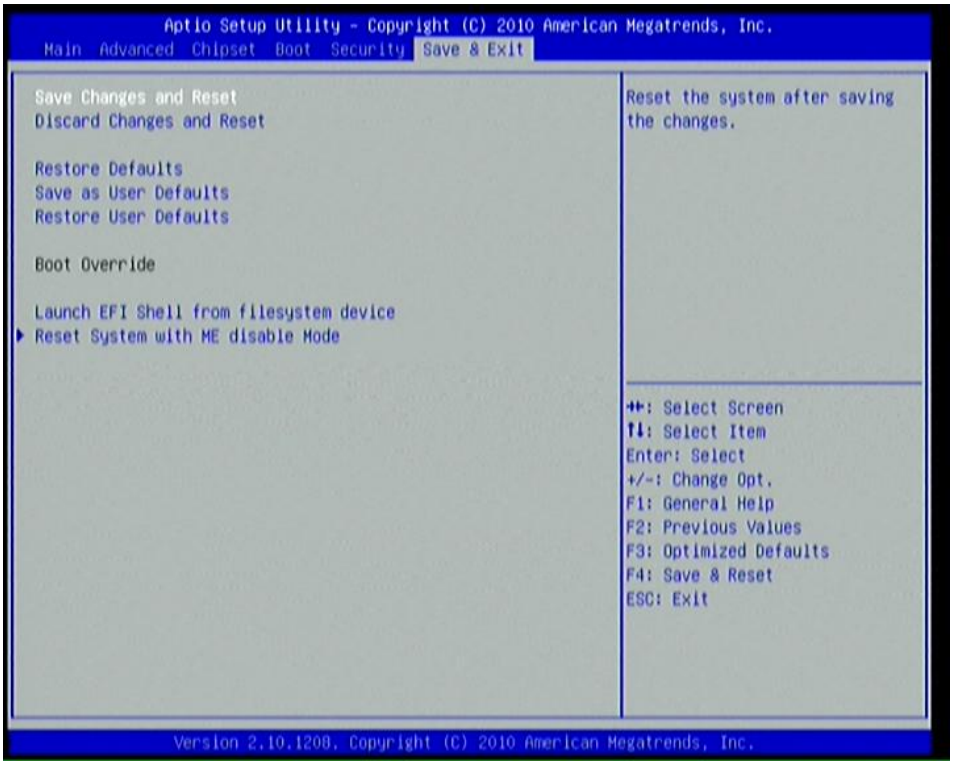
The optional settings are: [Enabled]; [Disabled].

3-10 Security Menu


Aptio Setup Utility – Copyright (C) 2010 American Megatrends, Inc.
Main Advanced Chipset Boot Security Save & Exit
Password Description
If ONLY the Administrator's password is set, then this only limits access to Setup and is only asked for when entering Setup.
If ONLY the User's password is set, then this is a power on password and must be entered to boot or enter Setup. In Setup the User will have Administrator rights.
The password must be 3 to 20 characters long.
Administrator Password
User Password
Set Setup Administrator Password
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Reset
ESC: Exit
Version 2.10.1208. Copyright (C) 2010 American Megatrends, Inc.

Security menu allow users to change administrator password and user password settings.

3-11 Save & Exit Menu


Aptio Setup Utility – Copyright (C) 2010 American Megatrends, Inc.
Main Advanced Chipset Boot Security Save & Exit
Save Changes and Reset
Discard Changes and Reset
Restore Defaults
Save as User Defaults
Restore User Defaults
Boot Override
Launch EFI Shell from filesystem device
Reset System with ME disable Mode
Reset the system after saving the changes.
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Reset
ESC: Exit
Version 2.10.1208. Copyright (C) 2010 American Megatrends, Inc.

Save Changes and Reset
This item allows user to reset the system after saving the changes.

Discard changes and Reset
This item allows user to reset the system without saving any changes.

Restore Defaults
Use this item to restore /Load default values for all the setup options.

Save as User Defaults
Use this item to save the changes done so far as user defaults.

Restore User Defaults
Use this item to restore defaults to all the setup options.

Launch EFI Shell from filesystem device

This item is used for attempts to launch EFI shell application from one of the available file system devices.

Reset System with ME disable Mode

ME will run into the temporary disable mode. Ignore if ME Ignition FW.